of this tissue through the lower forms and discusses some of the theories of its functions. He believes that Bevan Lewis' "scavenger cell" is but a form characterising the neuroglia cell in one period of its life history, and that in any proliferating process this earlier stage must be returned to, before fibrillation, as the final result can be attained. VOGEL.

138. A CONTRIBUTION TO THE STUDY OF HUMAN NEUROGLIA. W. Taylor (Jour. of Exp. Med., 2, 1897, p. 611).

On a basis of two cases of cerebral tumor the author, using Mallory's modification for staining the neuroglia, comes to the opinion that the term connective tissue should be dropped when discussing sclerosis of the nervous system, and that the term "glio-sarcoma" should also be relegated to oblivion. Neuroglia cells show a successive type of differentiation, first possessing no processes, later with processes, and finally these processes developing into true fibrils; thus he adopts Weigert's view. In the tumors under discussion both the latter stages were evident. In contradistinction to Weigert's statements, the author is not prepared to accept that a glioma is characterized by an increase of glia cells, while a gliosis consists of an increase of fibres. He further adds that no distinctive features separate gliomata and sarcomata. JELLIFFE.

139. NOTES ON GRANULES. A. Hill (Brain, 20, 1897, p. 125).

In using his chrome silver method, the author believes he has found a new type of cell in the cerebellum. These he first described as "granules with centripetal axis-cylinder processes." They resemble Golgi cells in an embryonic condition, but retaining their shape in the adult, he believes them to be a type distinct from the Golgi cells of the cerebellum. These cells were found near the summit of the folia and only in the deeper stratum of the granular layer. In diameter they range from 10-15 mikra. (in the rat), about the same as the ordinary cerebellar granule cells. Their axis cylinders run parallel with the fibres of the arbor vitae, often traversing the granular layer for some distance before joining the fibres. These are usually destitute of collaterals. Most of the cells are carrot-shaped, semi-fusiform. The centripetal axis cylinder process distinguishes them from the granules. The author has found these cells in the cat and in the rat. JELLIFFE.

140. STRUCTURE OF THE SPINAL GANGLIA OF MAMMALS W. Flemming (Arch. f. Psychiatrie, 29, 1897, p. 969).

Flemming confirms in the main the observations made by Lenhossék upon the structure of the cells of the spinal ganglia. By his method of progressive staining with hematoxylin he maintains, in opposition to Lenhossék, the fibrillary structure of the achromatic substances of the cells. These fibrillated structures are more or less longitudinally arranged at the sites of the origin of the dendrites and, in the main body of the cell, are more reticulated. It is, he believes, characteristic that this reticulum is more marked in the cells of the spinal ganglia than in the cells of the anterior horns or of the cortex. JELLIFFE.

141. DER ZELLENBAU DER GROSSHIRNRINDE DES AFFEN (MACACUS CYNOMOLGUS) The Cells of the Cortex of the Monkey (Macacus Cynomolgus). M. Schlapp (Arch. f. Psychiatrie, 30, 1898, p. 583).

The author here presents a careful and valuable contribution to our knowledge of the comparative cytology of the vertebrate brain. The investigation is made by the Nissl methods and this investigator's classification of the cell types is followed by the author: In the brain of the monkey it would appear that there are three fairly well differentiated areas, each with its distinctive grouping of cell elements. The region occupied by the first type comprises the frontal convolutions and is bounded behind by the precentral convolutions. Its cell distribution resembles in some particulars that of the motor region type of man consisting of five layers:

1. The layer of tangential fibres with irregular cell groupings.
2. Layer of the small polymorphous cells.
3. Layer of small pyramidal cells, with small oval and round cells between, most of the cells being found in the para pygnomorphic condition.
4. Layer of large and giant pyramidal cells which are usually in the pygnomorph condition.
5. Layer of polymorphous or spindle cells.

The area of the second type occupies the region just posterior to that of the first type, and constitutes the greater part of the cortex, leaving but a small area, homologous with the general occipital region for the third type.

This area is characterized by a seven-layered arrangement of cells. The first and second layers are similar to those found in the area of the first type. The third layer is also, in the main, similar; added to it are a number of cells for which B. Lewis has introduced the name "globose cells."

The fourth layer is the same as the outer half of the corresponding layer for the first type, while the inner half is made up of new type cells, constituting the fifth layer. These cells are the "granule cells" —corresponding to the 4th layer of Hammarberg's sensory type. The sixth layer contains pygnomorph pyramidal cells, similar to those found in the inner parts of the fourth layer of the first type, and the seventh layer is composed of the polymorphous cells.

The area of the third layer is the smallest, yet, perhaps, the most characteristic. It occupies the general region of the occipital lobes, and its cells appear to be arranged in eight more or less regular layers. These, briefly stated, are:

1st, 2d, and 3d layers as in the first type.
4th layer, reproduction cells, in "granule" cells.
5th layer, projection cells, apygnomorph pyramid cells.
6th layer, "granule" cells.
7th layer, projection cells.
8th layer, polymorphous cells.

The paper is well illustrated; and the character, and sizes, and variations of the various cells carefully elucidated. JELLIFFE.

PHYSIOLOGY.

142. A STUDY OF THE TEMPERATURE SENSE. J. F. Crawford (Psychological Rev., 5, 1898, p. 63).

In a preliminary report of experiments upon six subjects, the author comes to a conclusion the opposite of Goldscheider's, as he finds continuous sensitive regions, and within a fairly sensitive region he could not find a spot that was non-sensitive. These sensitive regions are of various size and indefinite limits, and within them are often found smaller regions of greater intensity, but never in the form of groups of spots.

Three of his subjects gave thirty sittings, and three gave eight sittings. He used two pairs of brass cylinders, one pair being ½ mm. across at the ends, and the other pair being considerably less. Sharper points produce the sensation of pricking or burning. The cylinders were partly covered with cork and immersed in hot and cold water of known temperatures.